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☐ 1: *Pol J Occup Med Environ Health* 1992;5(4):345-56

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### The study of exposure to cadmium in the general population. II. Morbidity studies.

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An epidemiological study was performed to assess whether environmental pollution by cadmium as found in cadmium polluted areas of CSFR (Příbram and Frydek-Místek) is associated with changes in biological indicators of renal dysfunction in non-occupationally exposed population groups. Polluted areas were chosen on the basis of existing sources of Cd emission. The city of Prague was selected as a control area. Environmental monitoring (Cd in air, dust fall and soil) did not confirm significant contamination of selected areas. It was found that Cd levels in urine (Cd-U) of inhabitants living in areas chosen as Cd-contaminated were significantly higher than in the control area. Differences in concentrations of Cd in blood (Cd-B) levels between individual areas were not significant. No significant differences between the study populations were noted in the urinary excretion of low molecular weight proteins (beta 2-microglobulin, retinol binding protein) and albuminuria. However, total proteinuria and aminoaciduria in persons living in Příbram area was significantly higher. This area suffers from combined contamination by cadmium and lead. In smokers of both sexes the Cd-B levels were significantly higher in all areas, no significant differences were found in Cd-U levels. However, it was found that in smokers there is higher percentage of persons excreting more than 0.9 micrograms Cd.g-1 creatinine in urine. Consumption of home-grown vegetable and fruit in Cd-polluted areas led to significantly higher levels of Cd-B and Cd-U and total proteinuria. The results of the study show that smoking and food seem to be the most important sources of Cd intake in non-occupationally exposed populations. In spite of the fact that environmental monitoring does not reveal a significant contamination of selected areas by Cd, Cd-U levels confirmed that population living in these areas is really exposed to Cd.

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Abstract